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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/270,688	03/16/1999	DANIEL DAVID YOUNG	2407-0004	2820

22204 7590 04/29/2008

NIXON PEABODY, LLP
401 9TH STREET, NW
SUITE 900
WASHINGTON, DC 20004-2128

EXAMINER	
CADUGAN, ERICA E	
ART UNIT	**PAPER NUMBER**
3726	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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7590 02/01/2008

SIXBEY, FRIEDMAN, LEEDOM & FERGUSON
8180 GREENSBORO DRIVE SUITE 800
MCLEAN, VA 22102

EXAMINER	
CADUGAN, ERICA E	
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3722	

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Office Action Summary	Application No.	Applicant(s)	
	09/270,688	YOUNG ET AL.	
	Examiner	Art Unit	
	Erica E. Cadugan	3722	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 6-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4 and 6-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. Claims 1, 4, 6, and 7-29, any of which were rejected under 35 USC 112 above are as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,449,256 (Sundman) in view of U.S. Patent No. 5,712,803 (Garuet-Lempirou).

Sundman teaches a system for use in an office environment for milling custom shoe insoles, where this system includes a foot contour measurement machine (column 1, lines 42-43) and a mill 10 for machining the insoles. The mill has a disk drive 15 for receiving the foot contour measurement data, which then controls the x, y, and z, movements of the milling head 21 to produce a desired insole contour (column 5, lines 27-34). To mill the insole, an insole blank 11 is mounted to a support tray 12. The relative motion in x, y, or z directions between the milling cutter and the insole blank may be achieved by moving the insole blank/tray, and/or by moving the milling head (column 3, lines 25-37). Motion of the milling head 21 and/or the motion of the tray 12 is controlled by stepper motors 51, 55, and 510 that act in response to the data inputted from the contour measurement machine. Sundman's milling station also includes a particle control system with positive-pressure air flow (column 7, lines 39-41) generated by fans, so that particles may be collected in tray 14 and disposed of. The air and the particles flow through channels 67-69, which, being enclosed and having higher pressure than that of the outside air, constitute plenums. The entrance 62 to these plenums is disposed in the vicinity of the milling assembly (column 7, lines 61-62). The velocity of the air flow through each channel

is inversely proportional to the volume of air flowing through each channel (column 8, lines 35-41). The air flow velocity is sufficient to eliminate particulate flux from the milling cavity (column 7, lines 45-48). According to the current application on page 7, line 24, the velocity of the air flow must be low enough to grab the debris particles, which Sundman's velocity is.

Sundman does not teach a laser scanner to scan the foot, but instead teaches a device having an array of parallel pins, each pin displaceable longitudinally such that when a foot is pressed against the pins, the longitudinal displacement of the pins represents the contour of the foot. Sundman also does not teach that the computer (with disk drive 15) is located in a lower portion of the milling machine stand, but instead teaches that it is located approximately in the middle portion of the stand (see Figure 1A).

Garuet-Lempirou teaches a device for scanning the sides and undersurface of a foot 4 (Figure 1) that is set on transparent glass base 40 (Figure 1 and column 5, lines 57-58, and column 1, lines 62-63). Garuet-Lempirou's device utilizes laser-generating sensors (column 2, lines 30-32 and column 3, lines 16-17 and 31-37) Ca1 through Ca4 (column 4, line 52 and Figure 1). The sensors are attached to a cradle 2 that moves in translation along longitudinal foot axis 4 (column 5, lines 65-67 and Figure 1). The cradle 2 has vertically-extending sides connected by a horizontally-extending portion, and is shaped so that the vertically-extending sides are outside of the width of base 40 and that the horizontally-extending portion is below base 40 (Figure 1 and column 6, line 41). Thus, regarding claim 14, the sensors disposed on the cradle beneath the base 40 are movable beneath the base 40 (see Figure 1 and column 6, lines 39-44).

Regarding the limitation in claim 1 that the "data is not calibrated by said at least one laser scanning unit", it is noted that the data in the Garuet-Lempirou reference is not

calibrated by the "laser scanning unit", but is instead calibrated by the signal processing unit 3 (see at least col. 5, lines 6-36 and Figure 2, as well as col. 6, lines 25-35, col. 10, lines 1-37, noting also that col. 13, lines 1-12 teach first "acquiring" the data, and then "calibrating" it).

Note that the Garuet-Lempirou reference teaches that the data points that are measured or "seen" by the cameras must be correlated with an absolute frame of reference in order to determine the exact shape of the measured foot (col. 6, lines 45-49, for example), and details the steps of such calibration and explicitly states that the "translation from one system of coordinates to the other is effected by means of a conventional matrix calculation" (col. 7, lines 42-44) and that "the acquired and digitized characteristics of the plate 40 are converted by the calibration process into an absolute frame of reference and stored in memory" (col. 10, lines 4-6), and further teaches that "the data successively acquired and digitized (section planes S_i) can therefore be converted into absolute coordinates knowing the position of the sensor holder 2 along the axis Δ during acquisition" (col. 10, lines 22-25). In other words, the "calibration" described in detail from col. 6, line 35 through col. 10, line 37 is a determination of a calibration matrix or "calibration data table", which table provides information on how much each measured data point needs to be adjusted to be accurate, and which "calibration data table" is used to convert the measured data, after the moment of measurement, into an accurate measurement that "correlates with" (via the calibration data table) the measured data point(s).

Thus, the gathered data taught by Garuet-Lempirou is "not calibrated" until it can be correlated with the calibration data table or matrix **(by the signal processor 3)** as described

above, thus, as best understood, meeting the limitation in claim 1 that "said data is not calibrated by said at least one laser scanning unit".

Similarly, regarding claims 13 and 17, note that the data as "gathered" is thus "non-calibrated data" (non-calibrated until it is "correlated" with the calibration matrix or data table described previously), and "directly correlates" (via the calibration matrix) to "accurate 2-dimensional distance measurements between the at least one laser scanning unit and the undersurface of the foot" as claimed.

Regarding claim 16, the plane or "fan" of laser light extends through the transparent base 40 as just described. Also regarding claims 16 and 18, Garuet-Lempirou's "transparent material" or "glass" for base 40 inherently includes tempered safety glass (column 5, lines 57-58, and column 1, lines 62-63).

Regarding claim 19, note that the sensors or "laser scanning units" Ca1 through Ca4 are disposed so as to be movable along the sides and base (Figure 1).

Regarding claim 21, the entire scanning device of Garuet-Lempirou (shown in Figure 1) acts as an input device for inputting information about the customer, i.e., the three-dimensional map of the customer's foot, to a signal processing system 3 having display Visu (Figure 2 and column 5, lines 7-10, 16-18, and 25-37). Garuet-Lempirou further teaches that the data acquired via the foot-scanning device may be supplied to and used to control automatic processing devices (column 6, lines 30-35).

It is noted that the entire purpose of Garuet-Lempirou's scanning device is to "determine data which directly correlates to distance measurements between the at least one laser scanning

unit and the underside of the foot" as claimed (see columns 4-6 and col. 10, lines 10-25, for example, also columns 1-2).

Additionally re claim 16, it is noted that the foot in Garuet-Lempirou is being "directly" measured (see Figure 1, for example).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced the longitudinal-pin-type foot contour measurement machine taught by Sundman with the laser scanning foot contour measurement device taught by Garuet-Lempirou for the purpose of being able to acquire three-dimensional foot data that takes into account the entire measured surface area rather than just the selected points where the longitudinal pins of Sundman's device contact the foot, thus increasing the accuracy of the measured foot data, thus allowing a better fitting shoe insole to be manufactured, as would be readily understood by one of ordinary skill in the art.

Regarding the placement of the control device in the milling stand, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have placed this control device wherever was desired or expedient, particularly since moving the device from the middle portion of the stand to the lower portion of the stand would not affect the operation of Sundman's device, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

3. Claim 3, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,449,256 (Sundman) in view of U.S. Patent No. 5,712,803 (Garuet-Lempirou) as applied to claim 1 above, and further in view of Applicant's admission of prior art (AAPA) on page 8, lines 11-15. Sundman and Garuet-Lempirou disclose all of the elements as

claimed as described above, except that Garuet-Lempirou is silent as to whether or not the laser is non-focused. In the specification on page 8, lines 11-15, Applicant admits that the specifics of the laser technology used in the laser scanners is known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have scanned the necessary portions of the foot with a non-focused "fan-shaped" line of laser light as this is known laser technology according to AAPA, and thus little trouble-shooting would be involved in using a known technology.

Response to Arguments

4. Applicant's arguments filed January 22, 2007 have been fully considered but they are not fully persuasive.

5. With respect to the rejection under 35 USC 103(a) of the claims in view of the combination of Sundman and Garuet-Lempirou, Applicant has asserted the following:

> In contrast, the data points measured or scanned in the Garuet-Lempirou reference require calibration due to the deformation of the laser beams as they pass through the non-plane transparent wall. A review of the remainder of Garuet-Lempirou reveals that the patentee provides no guidance to modify those teachings mentioned above to perform a scanning requiring no calibration of the scanned foot by the scanning device. Therefore, the combination of teachings of Sundman ('256) and Garuit-Lempirou ('803) does not teach each and every feature of the claimed invention, and, further, does not provide one of ordinary skill in the prior art a suggestion to modify the teachings of Garuit-Lempirou to perform no calibration of the measured coordinates. Consequently, a prima facie case of obviousness is not present, and the rejections of claims 1, 4, and 6-29 should be withdrawn.

Firstly, Applicant has asserted that Garuet-Lempirou does not teach a scanning "requiring no calibration of the scanned foot by the scanning device". However, independent claim 1 sets forth "wherein said data is not calibrated by said at least one laser scanning unit", and independent claims 13 and 17 set forth "means for gathering non-calibrated data". As noted in

the above rejection based thereon, Garuet-Lempirou's data is not calibrated by the "laser scanning unit", and is not calibrated until it reaches the signal processor 3 (i.e., thus, the data as gathered is "non-calibrated" and is calibrated subsequently by signal processor 3).

6. Secondly, Applicant has asserted that "the combination of teachings of Sundman ('256) and Garuit-Lempirou ('803)... does not provide one of ordinary skill in the prior art a suggestion to modify the teachings of Garuit-Lempirou to perform no calibration of the measured coordinates". However, it is noted that the features upon which applicant relies (i.e., that "no calibration" whatsoever of the measured coordinates occurs) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181; 26 USPQ2d 1057 (Fed. Cir. 1993). Examiner further notes that in applicant's remarks on the page labeled "Page 9" (forming page 10/13 of the faxed document) sets forth that in the present invention, "the data is not calibrated by the 'at least one laser scanning unit'", and further teaches that "[I]t is calibrated when it reaches the computer or microprocessor", i.e., the present invention does not provide a teaching of the argued collection of data with no calibration, but instead, in the present invention, the gathered data is calibrated by a computer or microprocessor, as also taught by Garuet-Lempirou and described above.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica E. Cadugan whose telephone number is (571) 272-4474. The examiner can normally be reached on M-F, 6:30 a.m. to 4:00 p.m., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erica E Cadugan
Primary Examiner
Art Unit 3722